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FIG. 2A

A

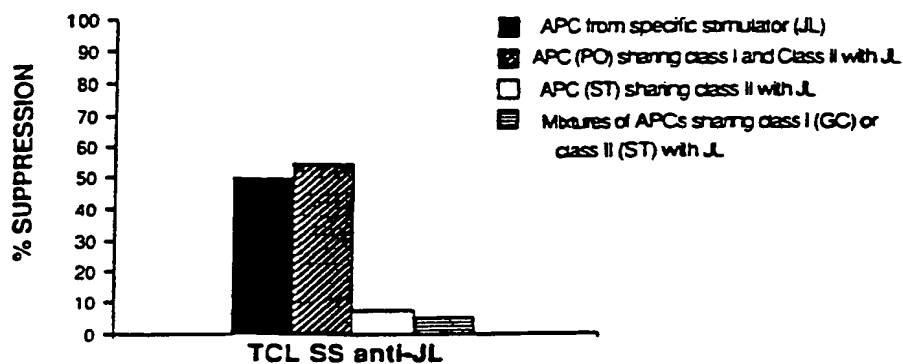
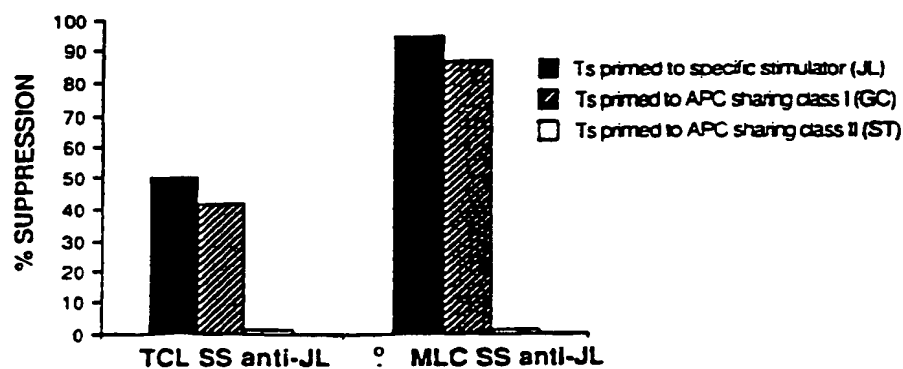


FIG. 2B

B



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FIG. 3

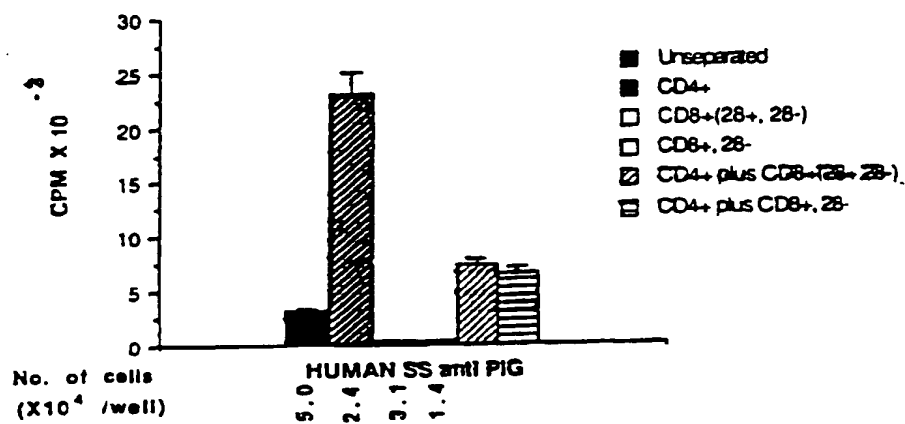
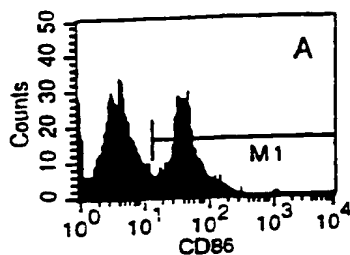


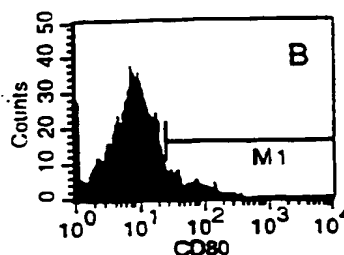
FIG. 4A



% Pos MFI

40 47

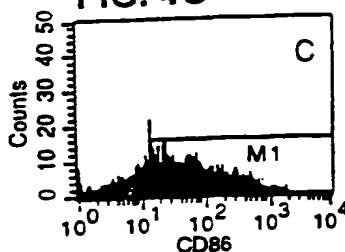
FIG. 4B



% Pos MFI

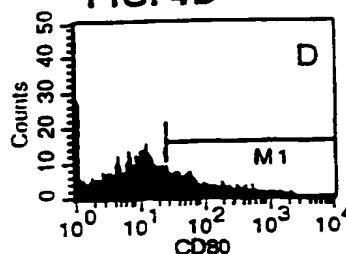
8 59

FIG. 4C



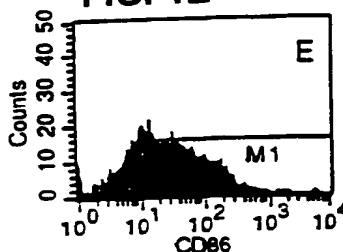
73 123

FIG. 4D



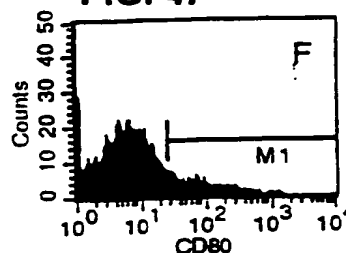
27 144

FIG. 4E



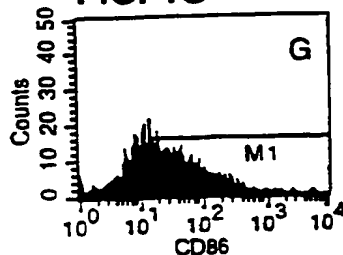
63 78

FIG. 4F



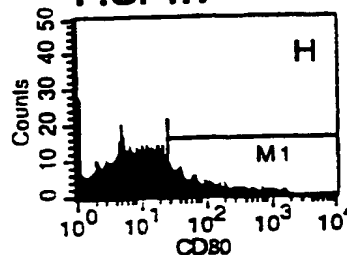
13 128

FIG. 4G



61 74

FIG. 4H

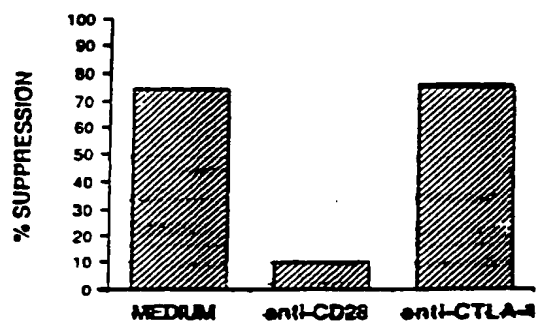


17 110

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FIG. 5



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FIG. 6A

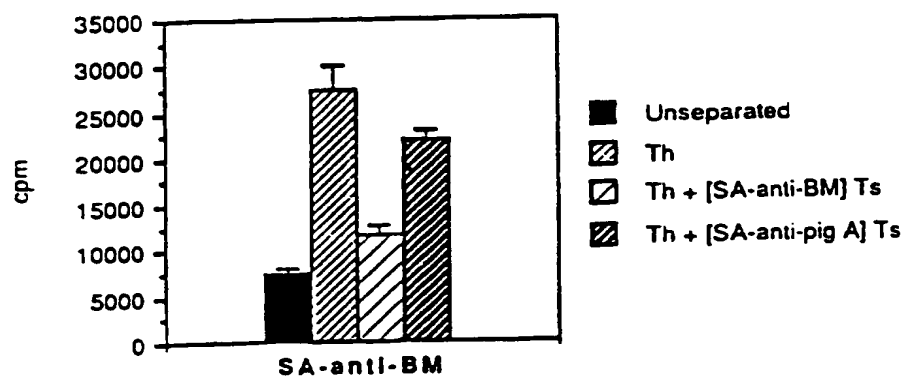
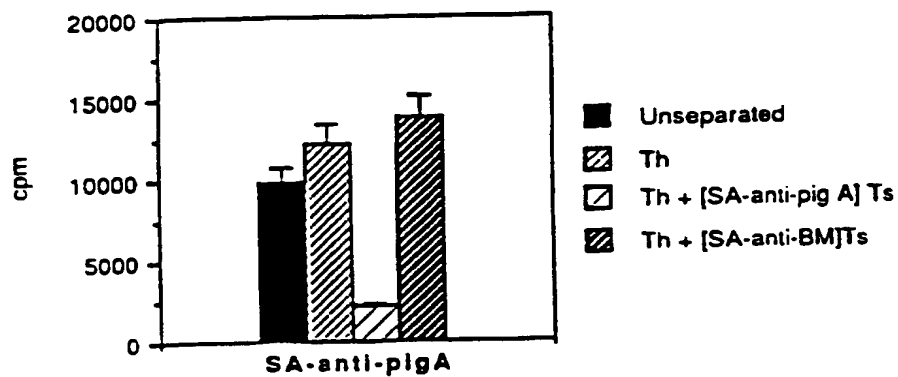


FIG. 6B



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FIG. 7A

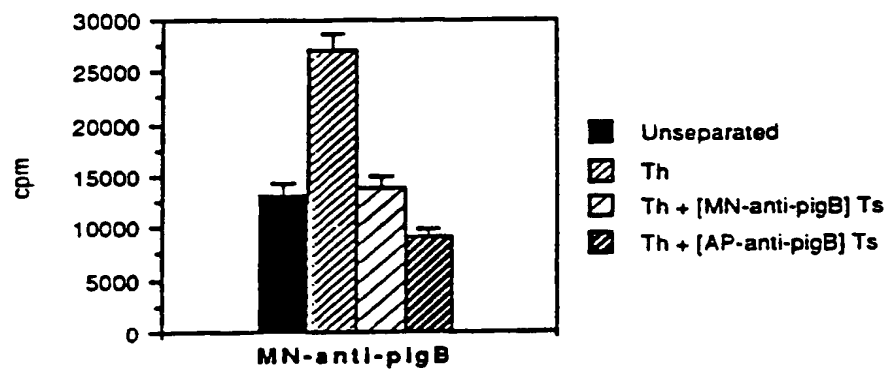
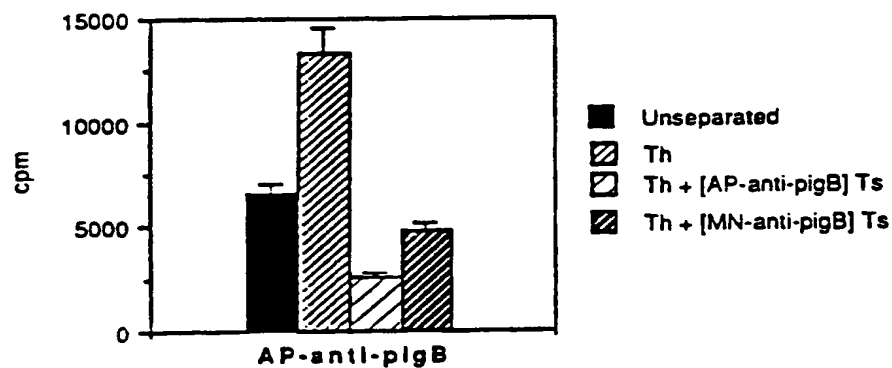


FIG. 7B



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FIG. 8A

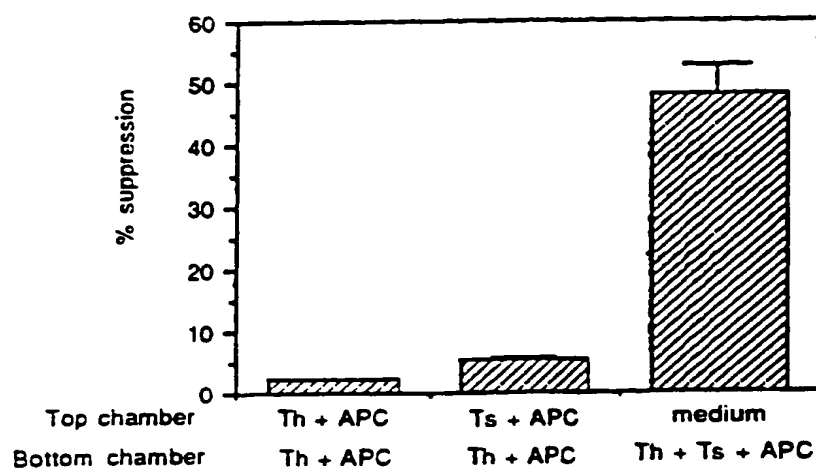


FIG. 8B

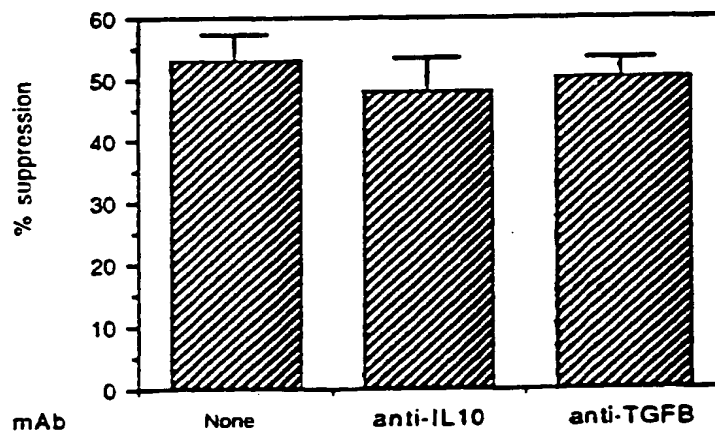
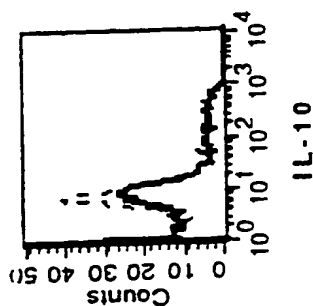


FIG. 9D



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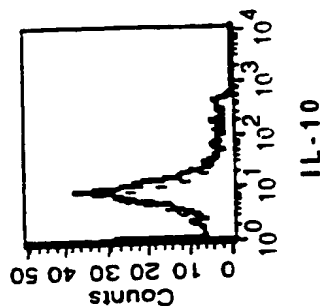


FIG. 9H

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FIG. 10A

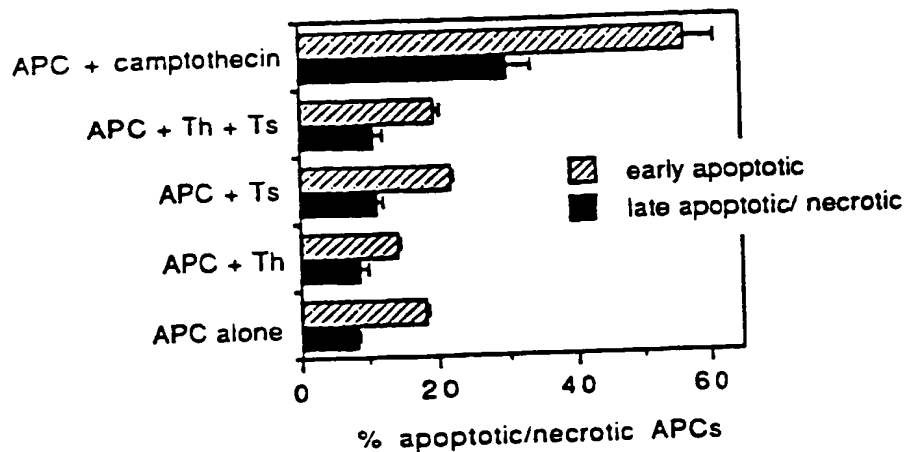


FIG. 10B

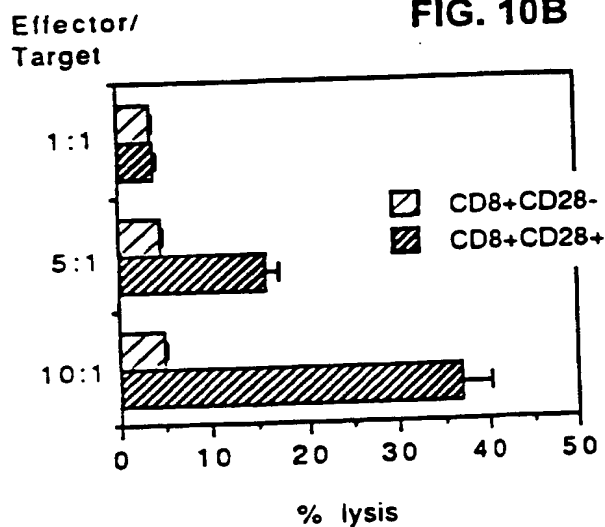
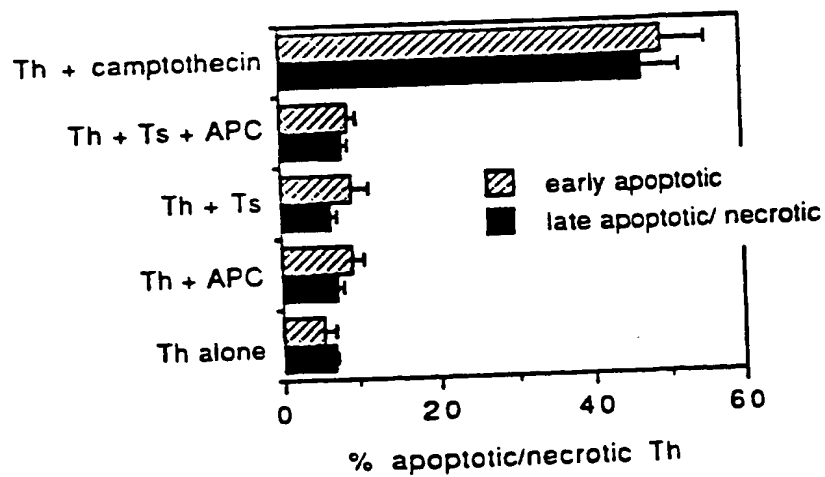


FIG. 10C



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FIG. 11A

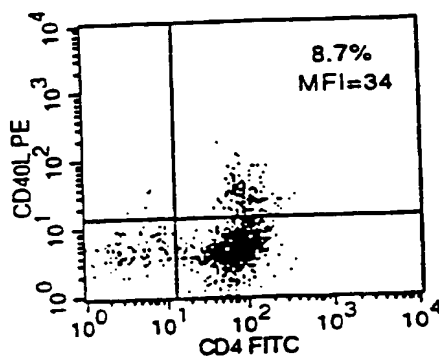


FIG. 11B

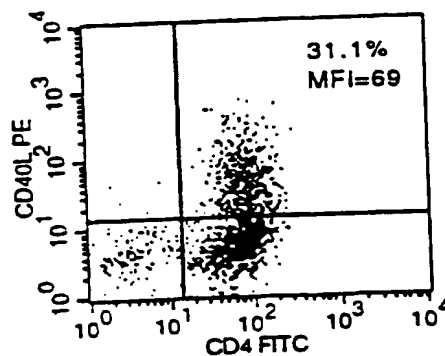


FIG. 11C

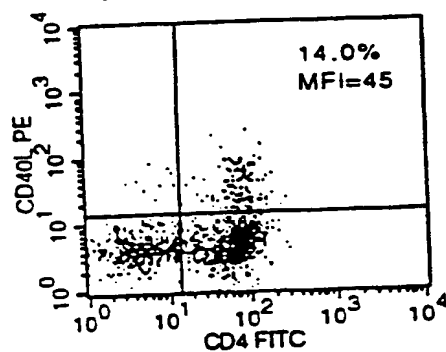
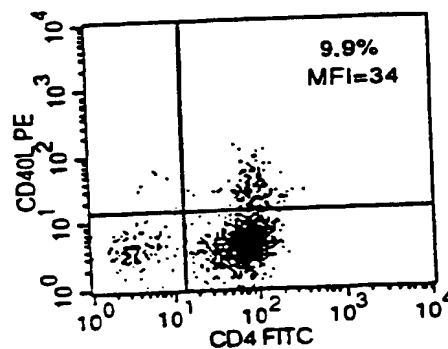


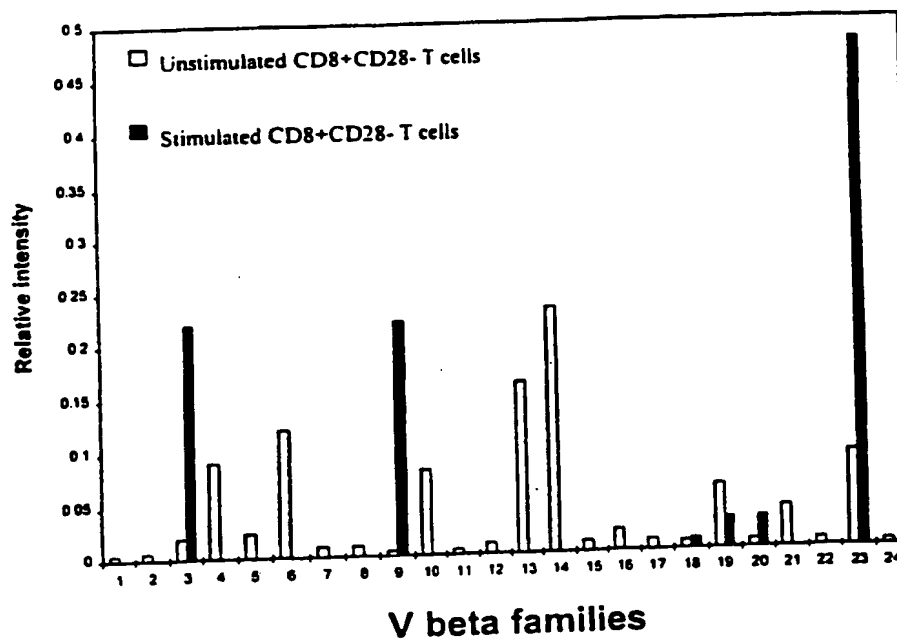
FIG. 11D



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FIG. 12



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FIG. 13A

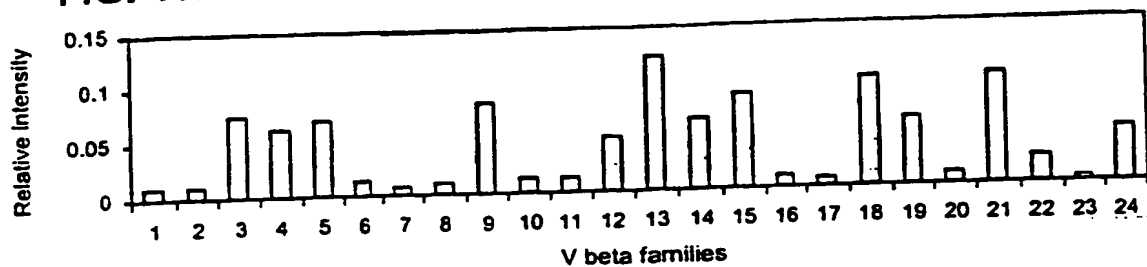


FIG. 13B

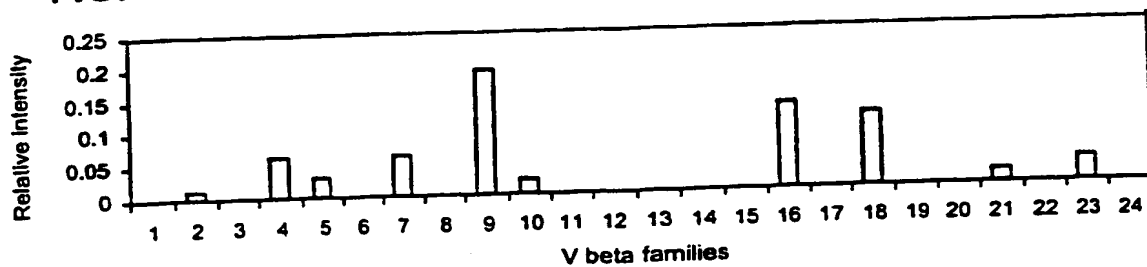


FIG. 13C

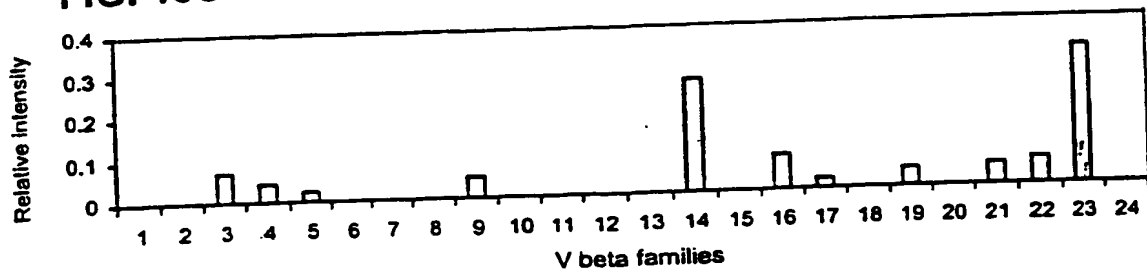
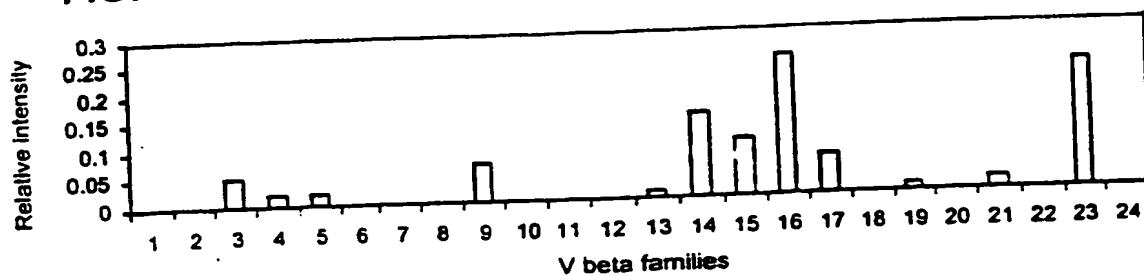


FIG. 13D



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FIG. 14A

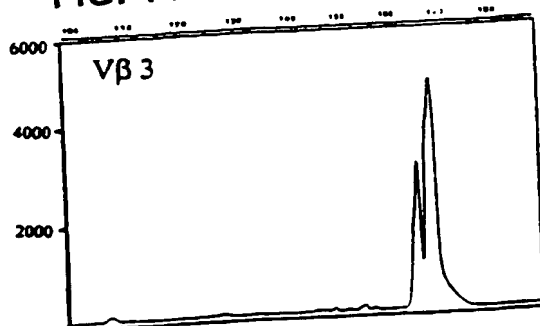


FIG. 14B

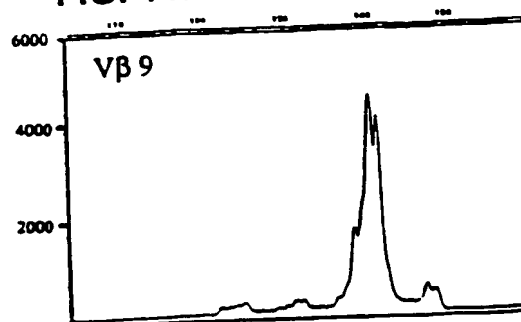


FIG. 14D

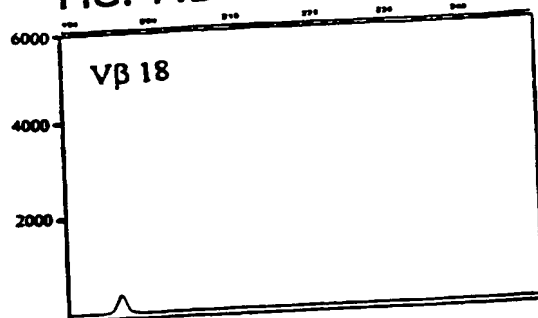


FIG. 14C

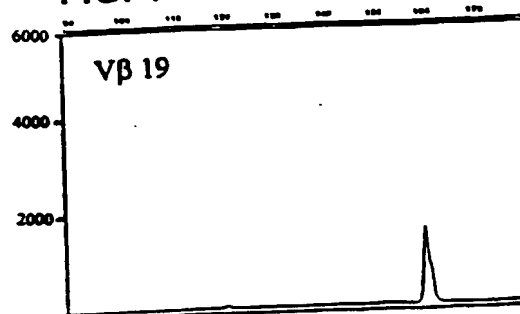


FIG. 14E

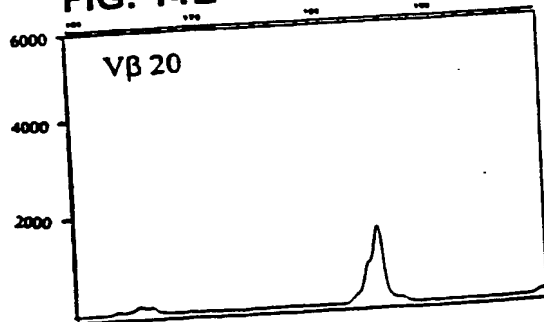
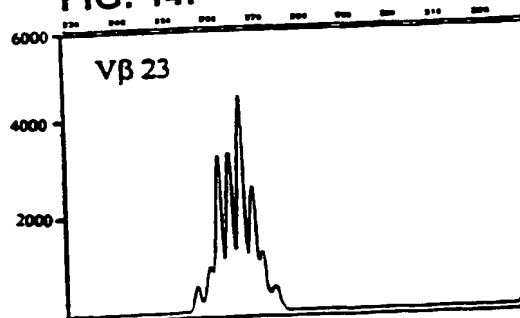


FIG. 14F



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FIG. 15A

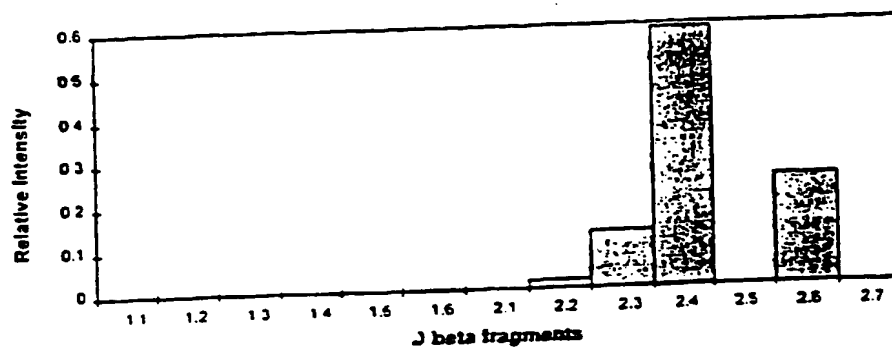


FIG. 15B

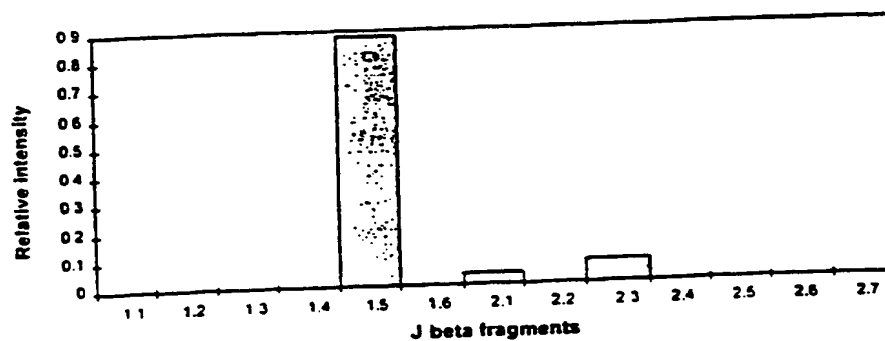
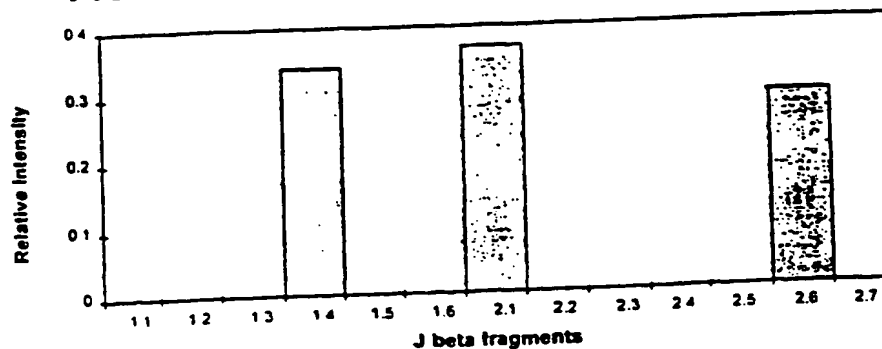
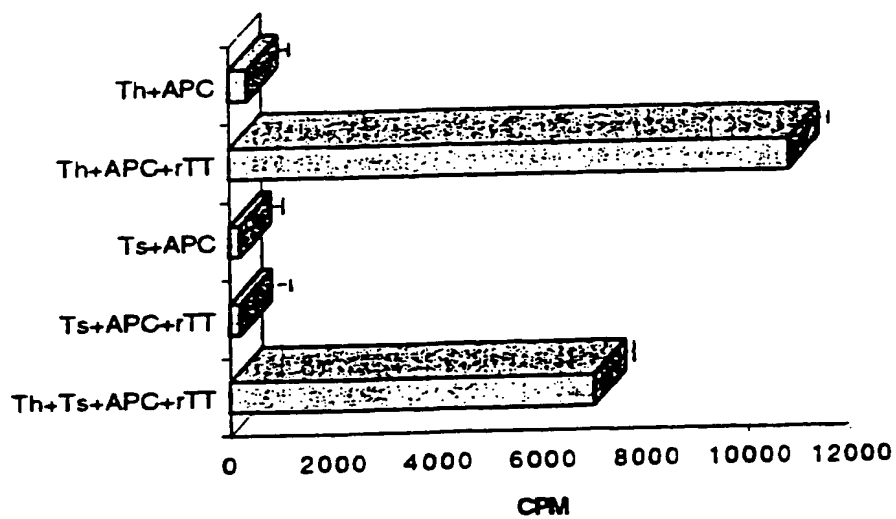


FIG. 15C



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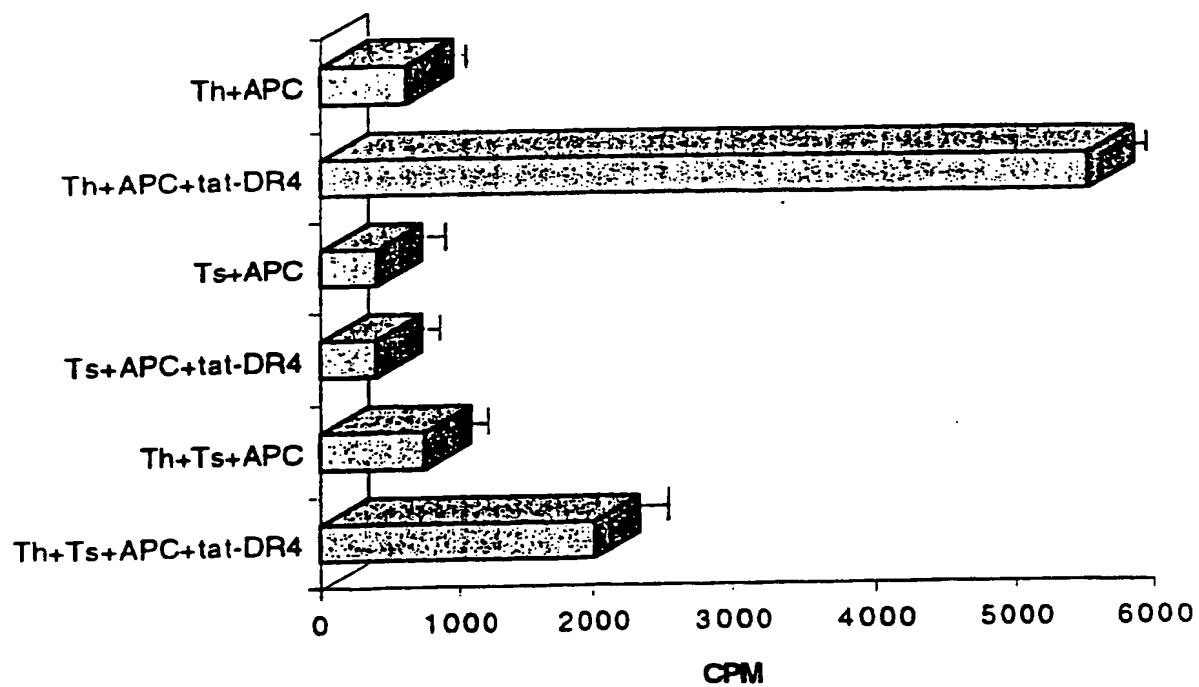
FIG. 16



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FIG. 17



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FIG. 18A

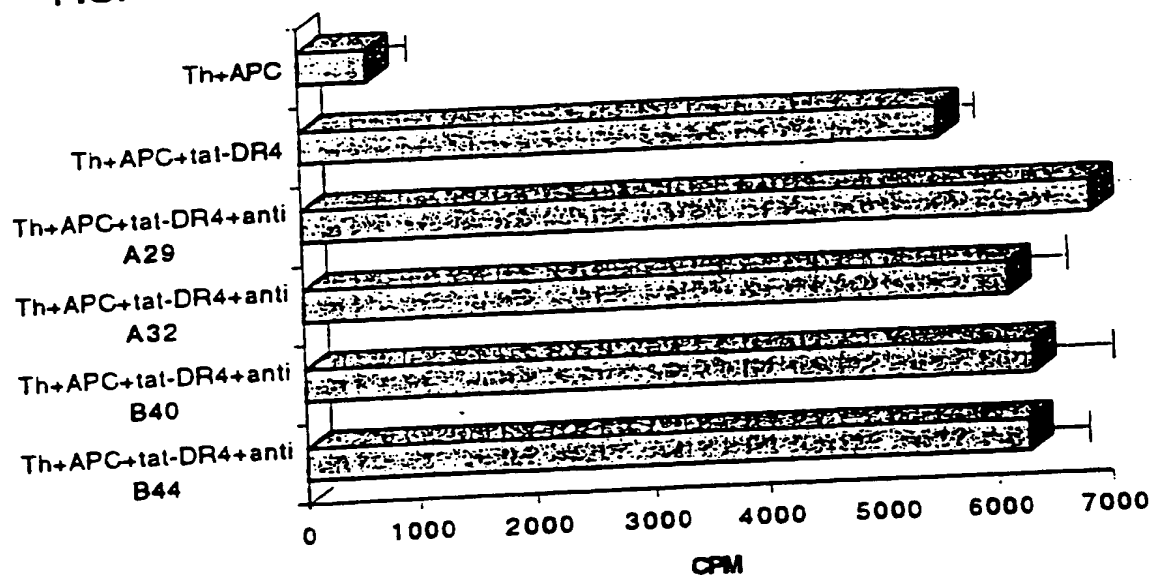
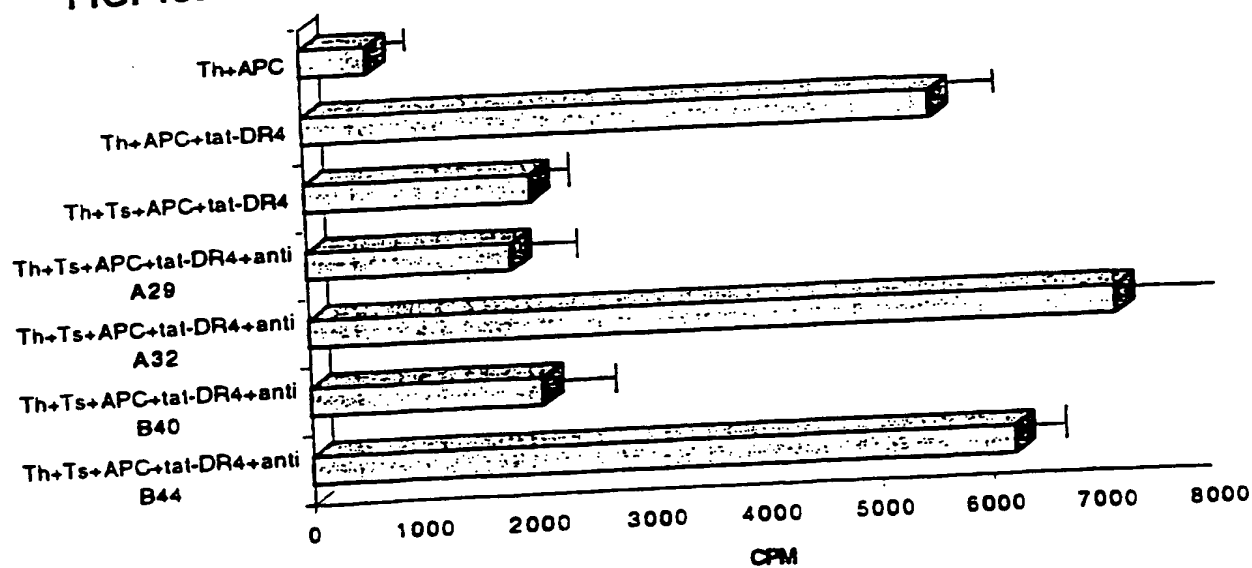


FIG. 18B



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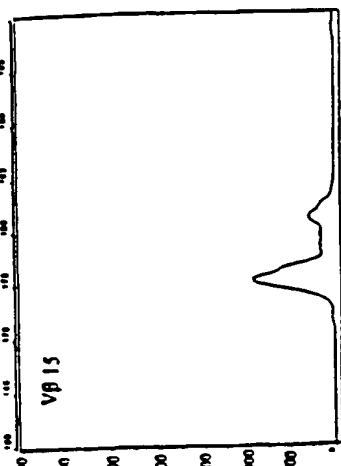


FIG. 19A-4

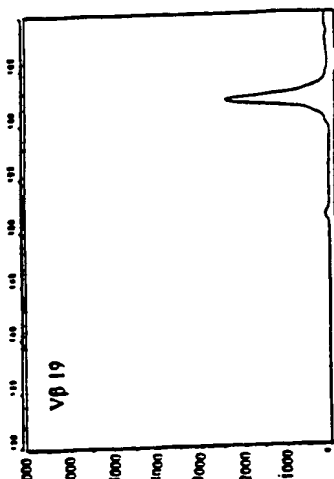


FIG. 19A-5

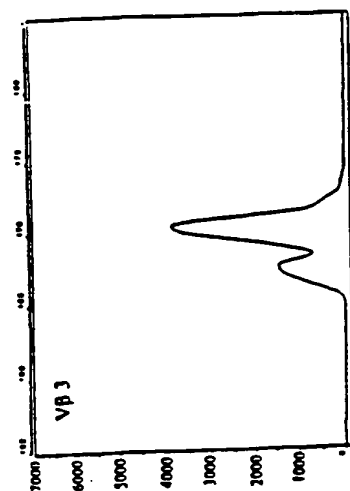


FIG. 19A-1

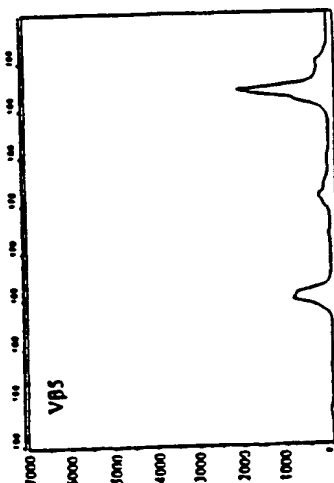


FIG. 19A-2

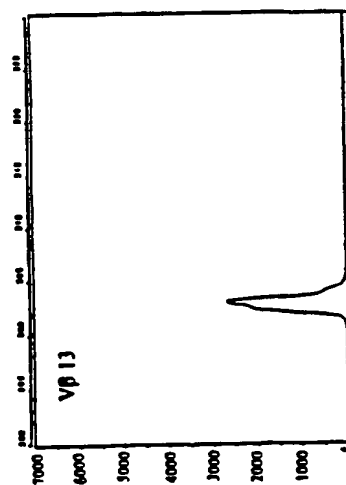


FIG. 19A-3

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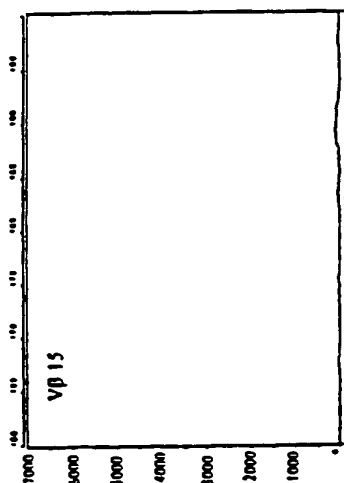


FIG. 19B-4

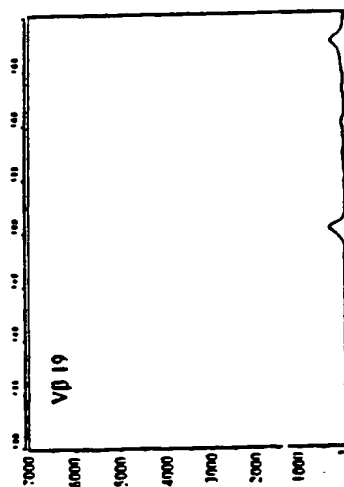


FIG. 19B-5

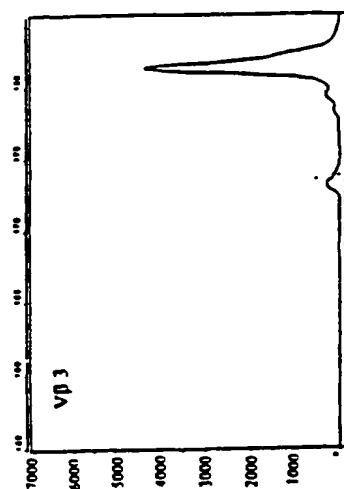


FIG. 19B-1

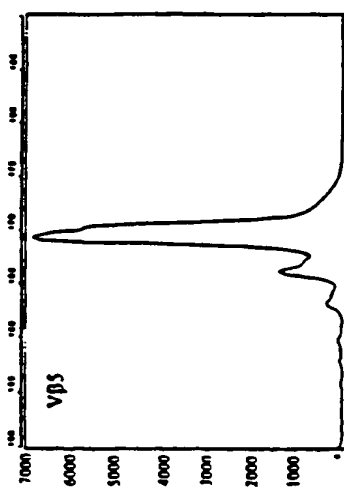


FIG. 19B-2

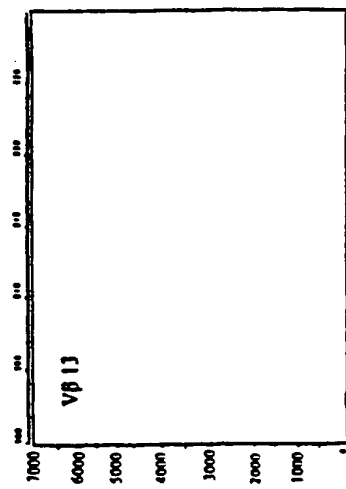
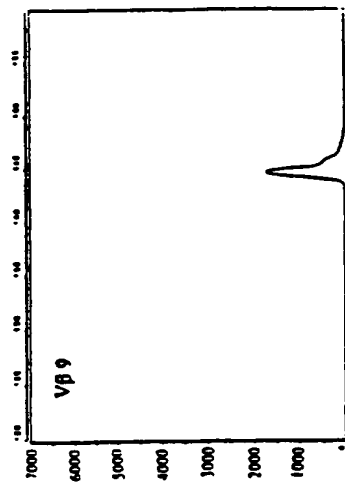
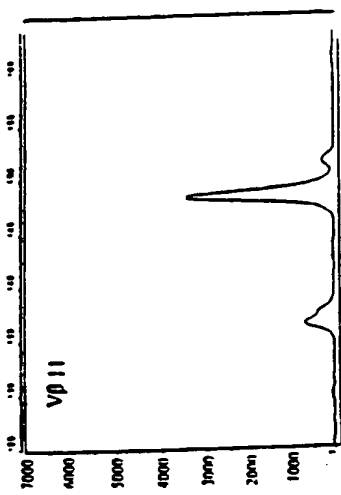
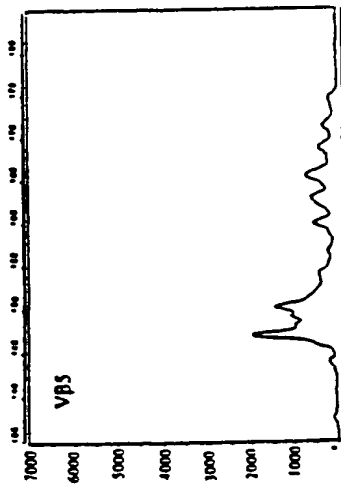
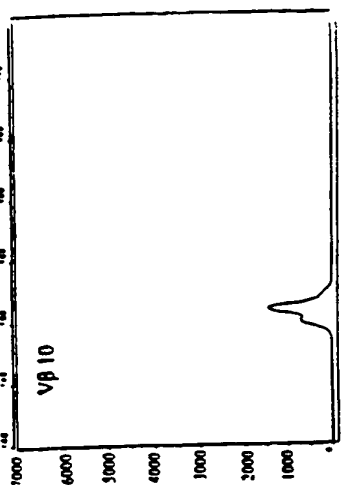
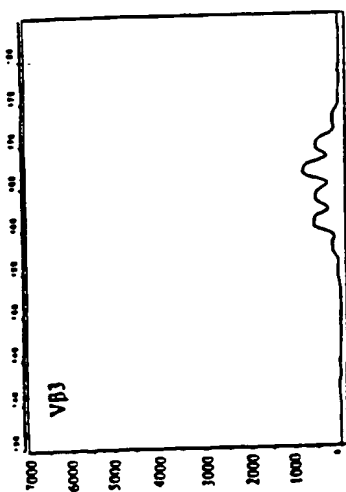


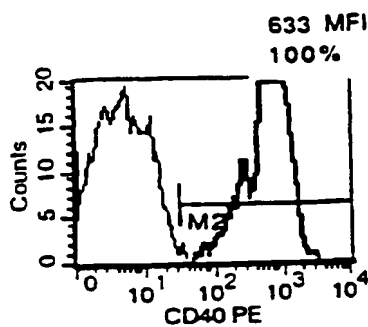
FIG. 19B-3



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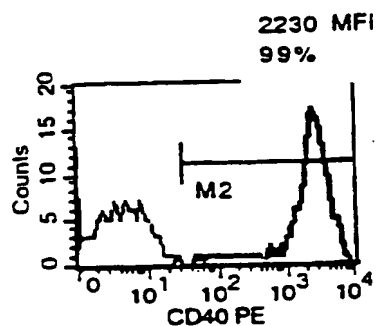
CD40

FIG. 20A



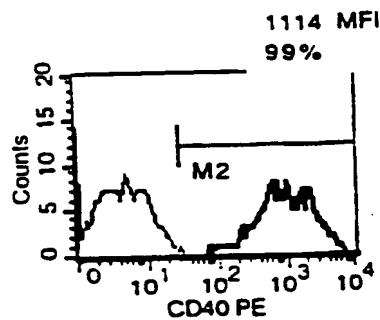
APC+tat-DR4

FIG. 20B



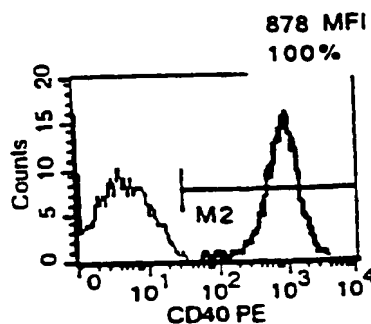
Th+APC+tat-DR4

FIG. 20C



Th+Ts+APC+tat-DR4

FIG. 20D



Ts+APC+tat-DR4

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CD80

FIG. 20E

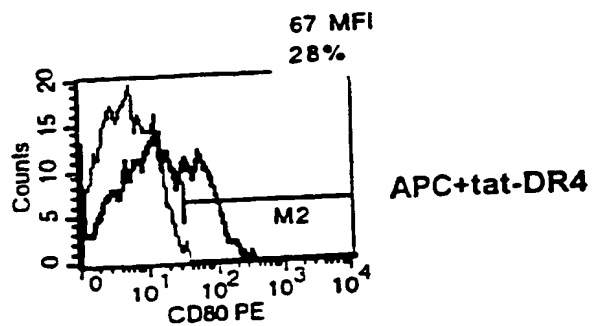


FIG. 20F

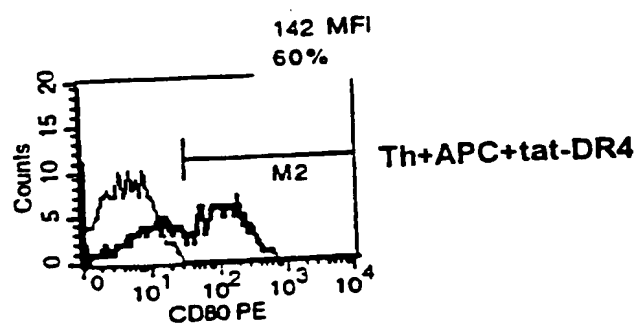


FIG. 20G

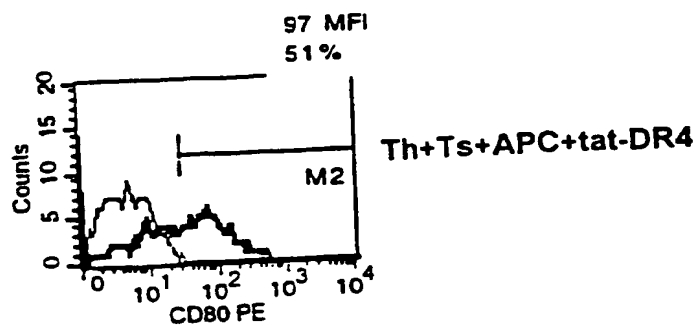
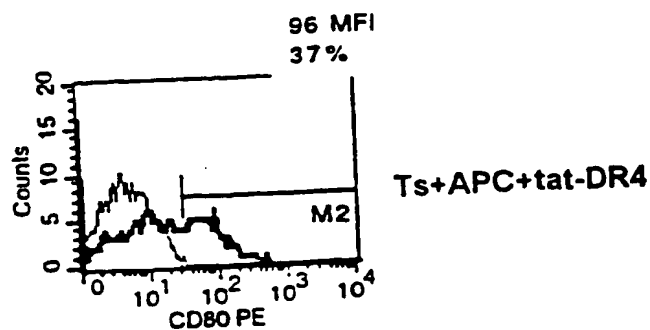


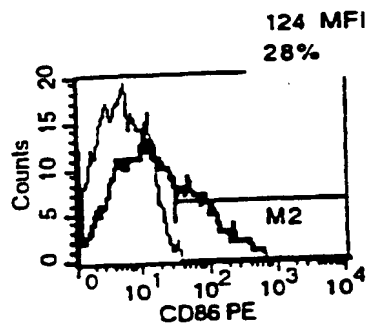
FIG. 20H



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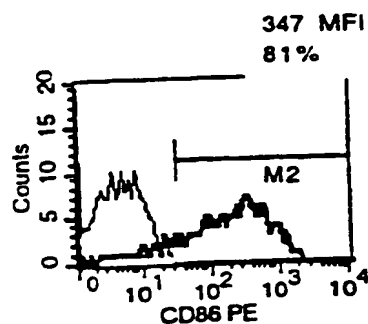
CD86

FIG. 20I



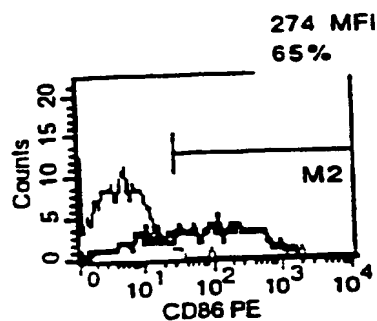
APC+tat-DR4

FIG. 20J



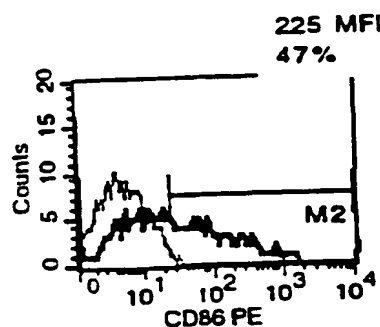
Th+APC+tat-DR4

FIG. 20K



Th+Ts+APC+tat-DR4

FIG. 20L



Ts+APC+tat-DR4

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FIG. 21C

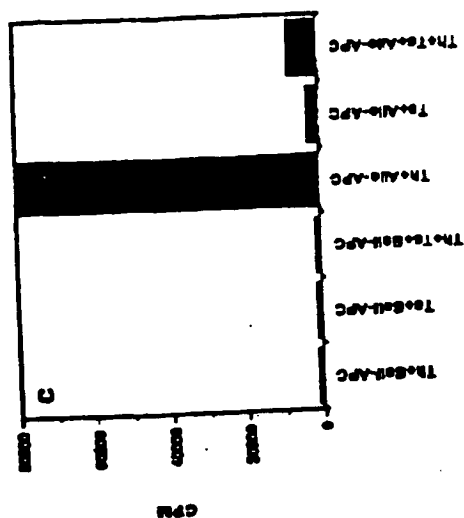


FIG. 21A

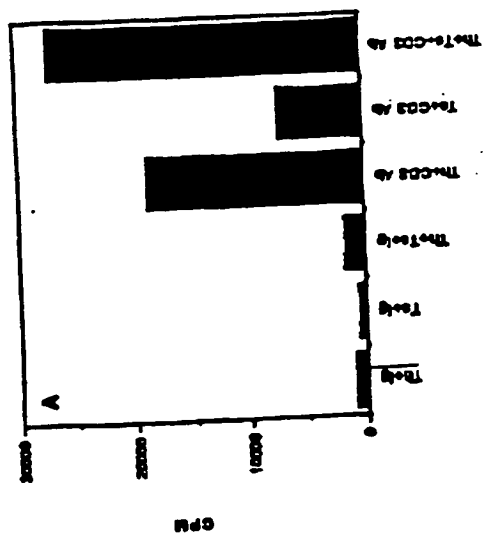


FIG. 21D

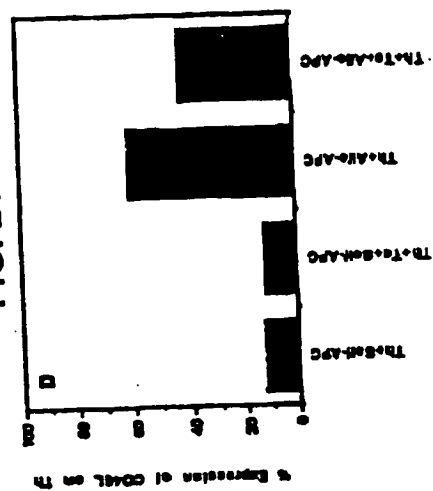


FIG. 21B

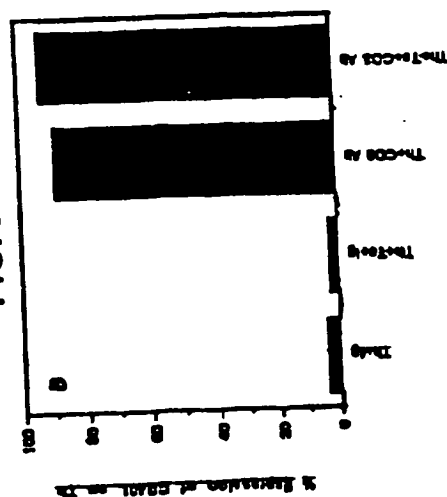
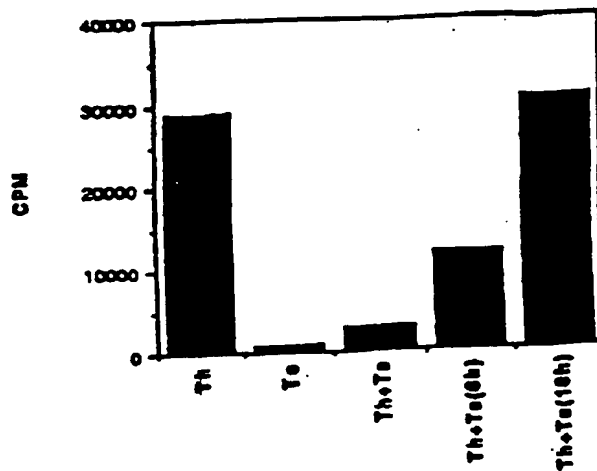
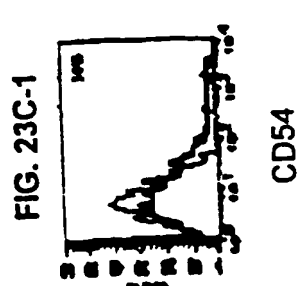
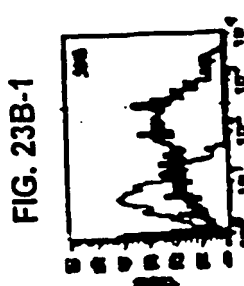
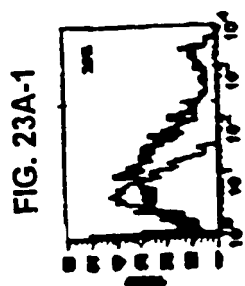
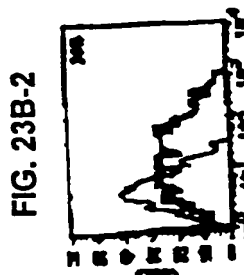
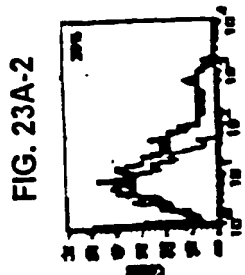
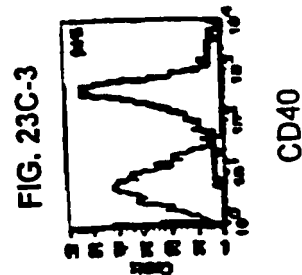
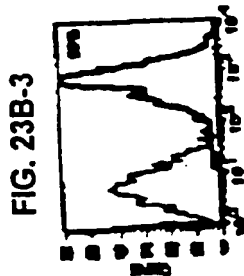
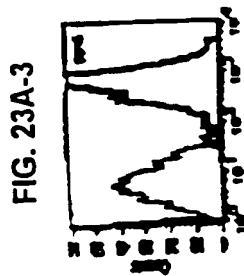
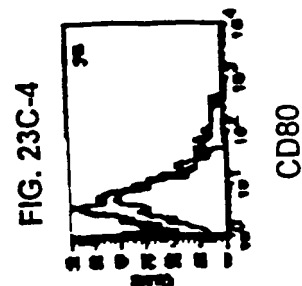
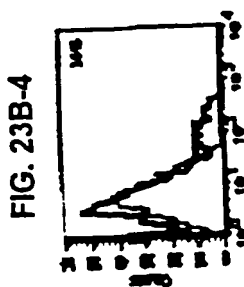
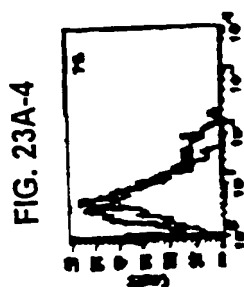
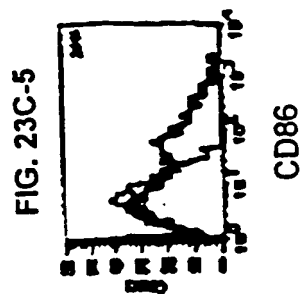
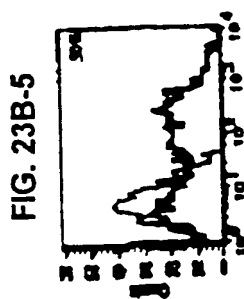
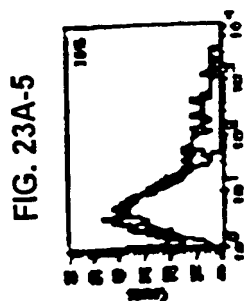
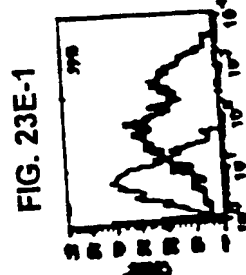
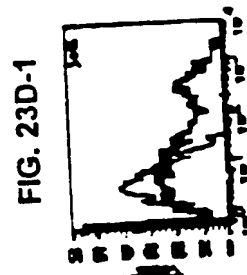
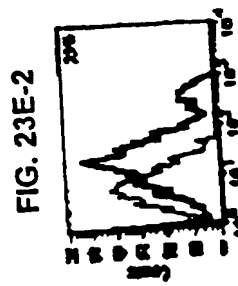
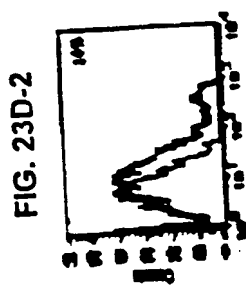
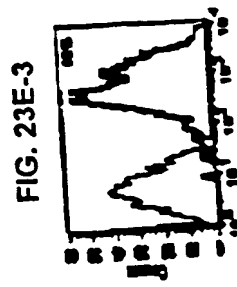
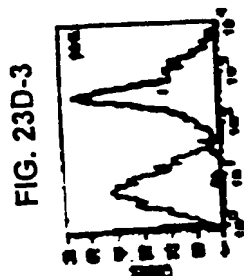
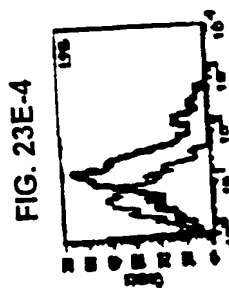
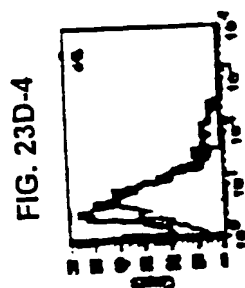
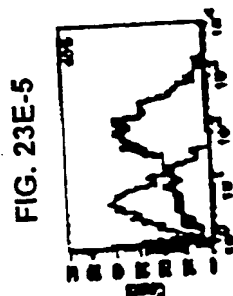
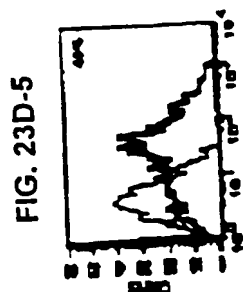


FIG. 22

[illegible]

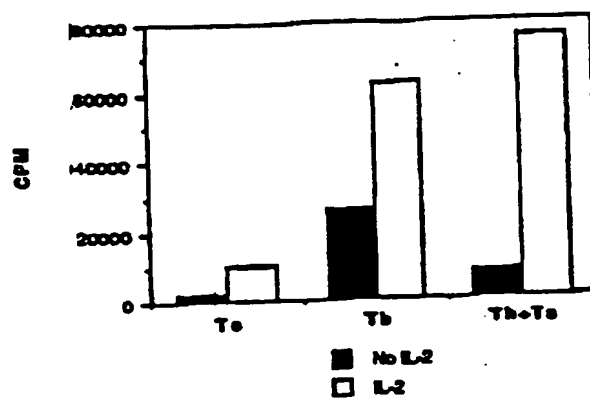


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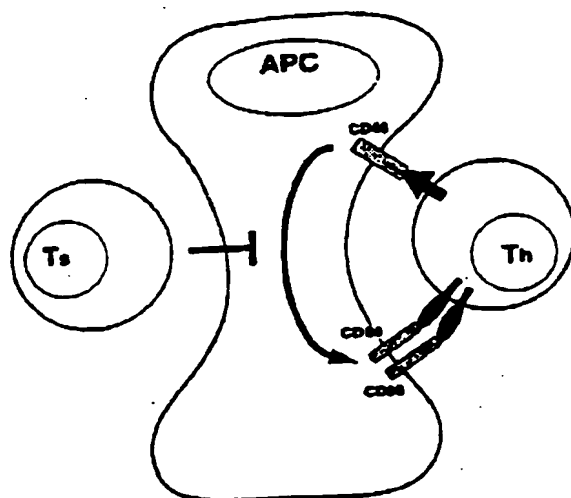
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FIG. 24



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FIG. 25



1001057.051500

FIG. 26

HLA A, B and DR Antigen Values and Split Equivalences

| A LOCUS | EQUIVALENT | B LOCUS | EQUIVALENT | DR LOCUS | EQUIVALENT |
|------------|------------|------------|-------------|-------------|------------|
| 1 | 1 | 6 | 6 | 1 | 1 |
| 2 | 2 | 7 | 7 | 2 | 2,15,16 |
| 3 | 3 | 8 | 8 | 3 | 3,17,18 |
| 9 | 9 | 12 | 12 | 4 | 4 |
| 10 | 10,66 | 13 | 13 | 5 | 5,11,12 |
| 11 | 11 | 14 | 14,64,65 | 6 | 6,13,14 |
| 19 | 19,74 | 15 | 15,75,76,77 | 7 | 7 |
| 23 | 23 | 16 | 16 | 8 | 8 |
| 24 | 24 | 17 | 17,58 | 9 | 9 |
| 25 | 25 | 18 | 18 | 10 | 10 |
| 26 | 26 | 21 | 21 | 11 | 11,5 |
| 28 | 28,68,69 | 22 | 22,54,55,56 | 12 | 12,5 |
| 29 | 29 | 27 | 27 | 13 | 13,5 |
| 30 | 30 | 35 | 35 | 14 | 14,5 |
| 31 | 31 | 37 | 37 | 15 | 15,2 |
| 32 | 32 | 38 | 38 | 16 | 16,2 |
| 33 | 33 | 39 | 39 | 17 | 17,3 |
| 34 | 34 | 40 | 40,61 | 18 | 18,3 |
| 36 | 36 | 41 | 41 | 61 | 61 |
| 43 | 43 | 42 | 42 | 62 | 62 |
| 66 | 66,10 | 44 | 44 | 63 | 63 |
| 68 | 68,28 | 45 | 45 | - 103 | 103 |
| 69 | 69,28 | 46 | 46 | - 1403 | 1403 |
| 74 | 74,19 | 47 | 47 | - 1404 | 1404 |
| 80 | 80 | 48 | 48 | - 99 | 99 |
| - 203 | 203 | 49 | 49 | | |
| - 210 | 210 | 60 | 60 | | |
| - 2403 | 2403 | 61 | 61 | | |
| - 99 | 99 | 62 | 62 | | |
| | | 63 | 63 | | |
| | | 64 | 64,22 | | |
| | | 65 | 65,22 | | |
| | | 66 | 66,22 | | |
| | | 67 | 67 | | |
| | | 68 | 68,17 | | |
| | | 69 | 69 | | |
| | | 70 | 70 | | |
| | | 71 | 71,40 | | |
| | | 72 | 72 | | |
| | | 73 | 73 | | |
| | | 74 | 74,15 | | |
| | | 75 | 75,15 | | |
| | | 76 | 76,15 | | |
| | | 77 | 77,15 | | |
| | | - 703 | 703 | | |
| | | - 3901 | 3901 | | |
| | | - 3902 | 3902 | | |
| | | - 4005 | 4005 | | |
| | | - 5102 | 5102 | | |
| | | - 5103 | 5103 | | |
| | | - 7801 | 7801 | | |
| | | - 8101 | 8101 | | |
| | | - 99 | 99 | | |

- Code 99 means not tested

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FIG. 27A

DRB Protein Sequences - 20th March 1998 - SGE Marsh ANRI

1 10 20 30 40 50 60 70 80 90 100

DRB1*0101
GDTRPRFLWQLKFECHFFNGTERVRLLERCIYNQEE SVRFDSDVGEYRAVTELGRPDAEYWNSQK
DLLEQRRAAVDTYCRHNYGVGESFTVQRRVEPKVTYV AV

DRB1*01021
DRB1*01022 ***** I-DE

DRB1*0103 N V

DRB1*0104 P-R F-D-YF F I-A V Q

DRB1*15011 P-R F-D-YF F I-A V

DRB1*15012 ***** P-R F-D-YF F I-A V

DRB1*15021 P-R F-D-YF F I-A Q

DRB1*15022 ***** F-D-YF F I-A

DRB1*15023 ***** P-R F-D-YF F I-A

DRB1*1503 P-R F-D-HF F I-A V Q

DRB1*1504 ***** P-R F-D-YF F F-A V

DRB1*1505 ***** P-R F-D-YF F A V

DRB1*1506 ***** P-R F-D-YF F-A I-A V

DRB1*16011 P-R F-D-YF F-D Q

DRB1*16012 ***** P-R F-D-YF F-D

DRB1*16021 P-R F-D-YF D Q

DRB1*16022 ***** P-R F-D-YF D

DRB1*1603 P-R F-D-YF F-D-A Q

DRB1*1604 ***** P-R F-D-YF F-D-L

DRB1*1605 ***** P-R F-D-YF I-D

DRB1*1607 ***** P-R FPD-YF I-D

DRB1*1608 ***** P-R F-D-YF N F-D

DRB1*03011 EYSTS Y-D-YFH N F K-GR-N V

DRB1*03012 ***** EYSTS Y-D-YFH N F K-GR-N V

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FIG. 27B

DRB1*03021 ———EYSTS———F—YFH—N———K-GR-N———
 H——
 DRB1*03022 ———EYSTS———F—YFH—N———K-GR-N———
 H——**
 DRB1*0303 *****YSTS———F—YFH—N———K-GR-N———V——
 —————
 DRB1*0304 *****EYSTS———Y-D-YFH———F———K-GR-N———V——

 DRB1*0305 *****EYSTS———Y-D-YFH—N———F———K-GR-N———
 —————
 DRB1*0306 *****EYSTS———Y-D-YFH—N———K-GR-N———V——
 —————
 DRB1*0307 ———EYSTS———F-D-YFH—N———F———K-GR-N———V——
 —H——
 DRB1*0308 ———EYSTS———Y-D-YFH—N———F———E———K-GR-N———V——
 —H——
 DRB1*0309 *****EYSTS———Y-D-YFH-R-N———F———K-GR-N———
 —————
 DRB1*0310 ———EYSTS———Y-D-YFH—N———F———A-H———K-GR-N———V——
 —H——
 DRB1*0311 *****EYSTS———Y-D-YFH—N———F———K-GQ-N———V——
 —————
 DRB1*04011 ———E-V-H———F-D-YF-H—Y———K———Y——
 E——
 DRB1*04012 *****E-V-H———F-D-YF-H—Y———K———

 DRB1*0402 ———E-V-H———F-D-YF-H—Y———I-DE———V——

 DRB1*0403 ———E-V-H———F-D-YF-H—Y———E———V———Y——
 E——
 DRB1*0404 ———E-V-H———F-D-YF-H—Y———V———Y——
 E——
 DRB1*04051 ———E-V-H———F-D-YF-H—Y———S———

 DRB1*04052 *****E-V-H———F-D-YF-H—Y———S———

 DRB1*0406 ———E-V-H———F-D-YF-H———E———V———Y——
 E——
 DRB1*0407 ———E-V-H———F-D-YF-H—Y———E———

 DRB1*0408 *****E-V-H———F-D-YF-H—Y———

 DRB1*0409 *****F-D-YF-H—Y———S———K———

 DRB1*0410 *****E-V-H———F-D-YF-H—Y———S———V——

 DRB1*0411 ———E-V-H———F-D-YF-H—Y———S———E———V———Y——
 E——
 DRB1*0412 *****E-V-H———F-D-YF-H—Y———S———I-D-L———V——

 DRB1*0413 *****H———F-D-YF-H—Y———K———V——

 DRB1*0414 *****F-D-YF-H—Y———I-DE———

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FIG. 27C

DRB1*0415 *****E-V-H-----F-D-YF-H-Y-----E-----F-D-----V-

DRB1*0416 *****-----F-D-YF-H-Y-----Q-----K-----

DRB1*0417 *****-----F-D-YF-H-Y-----S-----E-----

DRB1*0418 *****-----F-D-YF-H-Y-----I-D-L-----V-----

DRB1*0419 *****H-----F-D-YF-H-----

DRB1*0420 *****-----F-D-YF-H-----E-----

DRB1*0421 *****E-V-H-----F-D-YF-H-----K-----

DRB1*0422 *****E-V-H-----F-D-YF-H-Y-----K-GR-N-----V-----

DRB1*0423 *****E-V-H-----F-D-YF-H-Y-----V-R-----

DRB1*0424 *****E-V-H-----F-D-YF-H-Y-----S-----R-----

DRB1*0425 *****E-V-H-----F-D-YF-H-Y-----F-D-L-----V-----

DRB1*0426 *****E-V-H-----F-D-YF-H-Y-----T-----K-----

DRB1*0427 *****E-V-H-----F-D-YF-H-Y-----E-----AV-----

DRB1*11011 -----EYSTS-----F-D-YF-----Y-----F-----E-----F-D-----
H-----
DRB1*11012 -----EYSTS-----F-D-YF-----Y-----F-----E-----F-D-----
H-----
DRB1*11013 *****EYSTS-----F-D-YF-----Y-----F-----E-----F-D-----

DRB1*1102 -----EYSTS-----F-D-YF-----Y-----F-----E-----I-DE-----V-----
H-----
DRB1*1103 -----EYSTS-----F-D-YF-----Y-----F-----E-----F-DE-----V-----
H-----
DRB1*11041 -----EYSTS-----F-D-YF-----Y-----F-----E-----F-D-----V-----

DRB1*11042 -----EYSTS-----F-D-YF-----Y-----F-----E-----F-D-----V-----
H-----
DRB1*1105 *****EYSTG-----F-D-YF-----Y-----F-----E-----F-D-----

DRB1*1106 *****EYSTS-----F-D-YF-----Y-----F-----E-----F-D-----AV-----

DRB1*1107 *****EYSTS-----F-D-YF-----Y-----F-----E-----K-GR-N-----V-----

DRB1*11081 *****S-----F-D-YF-----Y-----F-----E-----D-----

DRB1*11082 *****S-----F-D-YF-----Y-----F-----E-----D-----

DRB1*1109 *****-----F-D-YFH-----N-----F-----E-----F-D-----

DRB1*1110 *****-----F-D-YFH-----F-----F-----E-----F-D-----

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FIG. 27D

DRB1*1111 *****S_____F-D-YF_____Y_____F_____E_____F-DE_____

DRB1*1112 *****_____F-D-YF_____F_____F_____E_____F-D_____

DRB1*1113 _____EYSTS_____F-D-YFH_____F_____F_____E_____R_____V_____

DRB1*1114 _____EYSTS_____F-D-YF_____Y_____F_____E_____I-DE_____

DRB1*1115 _____EYSTS_____F-D-YF_____DL_____F_____E_____F-D_____

H_____

DRB1*1116 *****-EYSTS_____F-D-YFH_____N_____F_____E_____I-DE_____V_____

DRB1*1117 _____EYSTS_____F-D-YFH_____F_____E_____R-E_____V_____

H_____

DRB1*1118 *****-EYSTS_____F-D-YF_____Y_____F_____E_____I-D_____V_____

DRB1*1119 *****-EYSTS_____F-D-YF_____Y_____F_____E_____I-D_____

DRB1*1120 *****-EYSTS_____F-D-YFH_____N_____F_____E_____I-DE_____

DRB1*1121 *****-EYSTS_____F-D-YF_____Y_____F_____E_____I-DE_____AV-

DRB1*1122 *****-E-V-H_____F-D-YF_____Y_____F_____E_____F-D_____

DRB1*1123 *****-EYSTS_____F-D-YF_____Y_____F_____E_____F-D-L_____

DRB1*1124 *****-EYSTS_____F-D-YF_____D_____F_____E_____F-D_____

DRB1*1125 *****-EYSTS_____F-D-YF_____Y_____F_____E_____F-D-L_____V_____

DRB1*1126 *****-EYSTS_____F-D-YF_____Y_____F_____E_____

DRB1*1127 *****-EYSTS_____F-D-YF_____Y_____F_____E_____F-D-N_____

DRB1*1128 *****-EYSTS_____F-D-YF_____N_____F_____E_____F-D_____

DRB1*1129 *****-EYSTS_____F-D-YF_____F_____E_____F-D_____

DRB1*1130 *****-EL-S_____F-D-YF_____Y_____F_____E_____F-D_____

DRB1*1131 _____EYSTS_____F-D-YF_____Y_____F_____E-H_____I-D_____

H_____

DRB1*1201 _____EYSTG-Y_____HFH-LL_____F_____V-S_____I-D_____AV_____

-H_____

DRB1*12021 *****-EYSTG-Y_____HFH-LL_____F_____V-S_____F-D_____

AV*****

DRB1*12022 *****-EYSTG-Y_____HFH-LL_____F_____V-S_____F-D_____AV-

DRB1*12032 *****-EYSTG-Y_____HFH-LL_____F_____V-S_____I-D_____V_____

DRB1*1204 *****-EYSTG-Y_____HFH-LL_____F_____E_____I-D_____

AV*****

DRB1*1205 *****-EYSTG-Y_____HFH-FL_____F_____V-S_____I-D_____AV_____

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FIG. 27E

DRB1*1301 ———EYSTS—————F-D-YFH—N——F—————I-DE—————V——
H——
DRB1*1302 ———EYSTS—————F-D-YFH—N——F—————I-DE—————
H——
DRB1*13031 ———EYSTS—————F-D-YF—Y—————S——I-DK—————
H——*
DRB1*13032 *****EYSTS—————F-D-YF—Y—————S——I-DK—————

DRB1*1304 ———EYSTS—————F-D-YF—Y——F——S——I-DE—————V——
H——*
DRB1*1305 *****EYSTS—————F-D-YFH—N——F—————F-D—————

DRB1*1306 *****F-D-YFH—N——F—————I-D—————V——

DRB1*13071 *****EYSTS—————F-D-YF—Y—————F-D—————

DRB1*1308 *****EYSTS—————F-D-YFH—F—————I-DE—————V——

DRB1*1309 *****EYSTS—————F-D-YFH—N——F—————I-A—————V——

DRB1*1310 *****EYSTS—————F-D-YFH—N——F—————I-DK—————V——

DRB1*1311 *****EYSTS—————F-D-YF—Y——F——F-D—————V——

DRB1*1312 *****EYSTS—————F-D-YF—Y—————S——I-D—————

DRB1*1313 *****EYSTS—————F-D-YF—Y—————S——I-D-L—————

DRB1*1314 *****TS—————F-D-YF—Y——F——F-D—————

DRB1*1315 *****EYSTS—————F—YFH—N——F—————I-DE—————V——

DRB1*1316 *****EYSTS—————F-D-YFH—N——F—————I-DE—————D——

DRB1*1317 ———EYSTG-Y——F-D-YF—Y——F——I-DE—————V——
H——
DRB1*1318 *****EYSTS—————F-D-YFH—N——F—————F-D-L—————V——

DRB1*1319 ———EYSTS—————F—YFH—F—————I-DE—————V——H——
——
DRB1*1320 *****EYSTS—————F-D-YFH—N——F—————DE—————V——

DRB1*1321 ———EYSTS—————F-D-YF—Y——F——S——F-D—————H——
——
DRB1*1322 ****EYSTS—————F-D-YF—Y——F——I-DE—————V——

DRB1*1323 *****EYSTS—————F-D-YF—Y——F——I-DE—————

DRB1*1324 *****EYSTS—————F-D-YF—Y——F——F-DE—————V——

DRB1*1325 *****EYSTS—————F-D-YF—Y——F——D—————

DRB1*1326 *****EYSTS—————F—YFH—N—————F-D—————

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FIG. 27F

DRB1*1327 *****-EYSTS-----Y-D-YFH-N-----F-----I-DE-----V-----

DRB1*1328 *****-EYSTS-----F-D-YFH-N-----F-----I-DE-----R-V-----

DRB1*1329 *****-EYSTS-----F-D-YFH-N-----F-----DE-----

DRB1*1330 *****-EYSTS-----F-D-YF-Y-----F-----S-----I-D-----

DRB1*1331 *****-EYSTS-----F-D-YFH-N-----F-----V-----I-DE-----

DRB1*1332 *****-EYSTS-----F-D-YFH-N-----S-----I-DE-----V-----

DRB1*1333 *****-EYSTS-----F-D-YF-Y-----S-----I-DK-N-----

DRB1*1401 -----EYSTS-----F-D-YFH-F-----A-H-----R-E-----V-----

DRB1*1402 -----EYSTS-----F-YFH-N-----

DRB1*1403 -----EYSTS-----F-YFH-N-----D-L-----

DRB1*1404 *****-EYSTG-Y-----F-D-YFH-F-----A-H-----R-E-----V-----

DRB1*1405 *****-EYSTS-Q-----F-D-YFH-F-----R-E-----V-----

DRB1*1406 *****-EYSTS-----F-YFH-N-----V-----

DRB1*1407 *****EYSTS-----F-D-YFH-F-----A-H-----R-E-----

DRB1*1408 *****-EYSTS-----F-D-YFH-F-----H-----R-E-----V-----

DRB1*1409 *****-EYSTS-----F-D-YFH-N-----

DRB1*1410 *****-E-V-H-----F-D-YFH-F-----A-H-----R-E-----V-----

DRB1*1411 *****EYSTG-Y-----F-D-YFH-F-----E-----R-E-----
V*****
DRB1*1412 *****S-----F-YFH-N-----D-L-----
V*****
DRB1*1413 *****EYSTS-----F-YFH-N-----S-----

DRB1*1414 *****-EYSTS-----F-D-YFH-F-----R-E-----

DRB1*1415 *****STG-Y-----F-D-YFH-F-----F-D-L-----V-----

DRB1*1416 *****-EYSTS-----F-D-YFH-F-----A-H-----I-DE-----V-----

DRB1*1417 *****-EYSTS-----F-D-YFH-N-----F-----V-----

DRB1*1418 *****EYSTS-----F-YFH-N-----R-E-----V-----

DRB1*1419 -----EYSTS-----F-YFH-N-----K-----

DRB1*1420 *****-EYSTS-----F-YFH-F-----V-----

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FIG. 27G

DRB1*1421 *****EYSTS-----F-D-YFH-N-----F-----K-----V-

DRB1*1422 *****EYSTS-----F-D-YFH-F-----A-H-----F-D-----

DRB1*1423 *****EYSTS-----F-D-YFH-F-----R-E-----V-----

DRB1*1424 *****EYSTS-----F-YFH-N-----I-A-----
H-----
DRB1*1425 *****EYSTS-----F-D-YF-Y-----A-H-----F-D-----

DRB1*1426 *****EYSTS-----QF-D-YFH-F-----A-H-----R-E-----V-----

DRB1*1427 *****EYSTS-----F-YFH-N-----F-D-L-----

DRB1*1428 *****EYSTG-Y-----F-D-YFH-F-----A-H-----R-E-----
AV*****
DRB1*1429 *****EYSTS-----F-YFH-N-----AV-----

DRB1*1430 *****EYSTS-----F-D-YFH-N-----F-----

DRB1*1431 *****EYSTG-Y-----F-D-YFH-F-----A-H-----R-----V-----

DRB1*0701 -Q-G-YK-----QF-LF-F-----V-S-I-D-GQ-V-----
H-E-----
DRB1*0703 *****G-YK-----QF-SLF-F-----V-S-I-D-GQ-V-----

DRB1*0801 -----EYSTG-Y-----F-D-YF-Y-----S-----F-D-L-----

DRB1*08021 -----EYSTG-Y-----F-D-YF-Y-----F-D-L-----
H-----
DRB1*08022 *****EYSTG-Y-----F-D-YF-Y-----F-D-L-----
-H-----
DRB1*08032 -----EYSTG-Y-----F-D-YF-Y-----S-----I-D-L-----
H-----
DRB1*08041 -----EYSTG-Y-----F-D-YF-Y-----F-D-L-----V-----
H-----*
DRB1*08042 *****F-D-YF-Y-----F-D-L-----V-----

DRB1*08043 *****EYSTG-Y-----F-D-YF-Y-----F-D-L-----V-----

DRB1*0805 *****EYSTG-Y-----F-D-YF-Y-----S-----F-D-----

DRB1*0806 *****EYSTG-Y-----F-D-YF-Y-----S-----F-D-L-----V-----

DRB1*0807 *****EYSTG-Y-----F-D-YF-Y-----V-----F-D-L-----

DRB1*0808 *****EYSTG-Y-----F-D-YF-Y-----A-H-----F-D-L-----

DRB1*0809 *****-Y-----F-D-YFH-F-----F-D-L-----

DRB1*0810 *****EYSTG-Y-----F-D-YF-Y-----S-----I-D-L-----V-----

DRB1*0811 *****EYSTG-Y-----F-D-YF-Y-----A-----F-D-L-----

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FIG. 27H

DRB1*0812 *****-EYSTG-Y-----F-D-YF-Y-----S-----I-D-L-----AV-----
 -*****
 DRB1*0813 *****-EYSTG-Y-----F-D-YF-Y-----D-L-----

 DRB1*0814 *****-EYSRG-Y-----F-D-YF-Y-----S-----I-D-L-----

 DRB1*0815 *****-EYSTG-Y-----F-D-YF-Y-----H-----I-D-L-----

 DRB1*0816 *****-EYSTG-Y-----F-D-YF-D-----S-----F-D-L-----

 DRB1*0817 *****-EYSTG-Y-----F-D-YF-Y-----F-----S-----F-D-L-----

 DRB1*0818 *****-EYSTG-Y-----F-D-YF-Y-----S-----I-D-----

 DRB1*0819 *****-EYSTG-Y-----F-D-YF-Y-----I-----I-D-L-----

 DRB1*09012 -Q-K-D-----Y-H-G-N-----V-S-F-R-E-V-----
 H-E-----
 DRB1*1001 -----EEV-----RVH-YA-Y-----R-----Q-----
 -

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FIG. 29

| | | | | | |
|--------------|-------------|------------|------------|------------|------------|
| | 1 | | | | 50 |
| Sladra-0102 | ----- | ----- | ----- | ----- | ----- |
| Sladra-0202 | ----- | ----- | ----- | ----- | ----- |
| Sladra-0203 | ----- | ----- | ----- | ----- | ----- |
| Sladra-0101 | ----- | ----- | ----- | ----- | ----- |
| Sladra-02011 | ----- | ----- | ----- | ----- | ----- |
| Sladra-02012 | ----- | ----- | ----- | ----- | ----- |
| Consensus | VENHVIIQAE | FYLSPDKSGE | FMFDFDGDEI | FHVDMEKRET | VWRLEEFQHF |
| | 51 | | | | 100 |
| Sladra-0102 | ----- | ----- | ----- | ----- | ----- |
| Sladra-0202 | ----- | ----- | -m----- | ----- | ----- |
| Sladra-0203 | ----- | ----- | ----- | ----- | ----- |
| Sladra-0101 | ----- | ----- | ----- | ----- | ----- |
| Sladra-02011 | ----- | ----- | -m----- | ----- | ----- |
| Sladra-02012 | ----- | ----- | -m----- | ----- | ----- |
| Consensus | ASFEAQGALA | NIADVKNLE | ILIKRSNNTP | NTNVPPEVTV | LSDKPVELGE |
| | 101 | | | | 150 |
| Sladra-0102 | ----- | ----- | ----- | ----- | ----- |
| Sladra-0202 | ----- | ----- | ----- | ----- | ----- |
| Sladra-0203 | ----- | ----- | ----- | ----- | ----- |
| Sladra-0101 | ----- | ----- | ----- | ----- | ----- |
| Sladra-02011 | ----- | ----- | ----- | ----- | ----- |
| Sladra-02012 | ----- | ----- | ----- | ----- | ----- |
| Consensus | PNILICFIDK | FSPPVVNVTV | LRNGSPVTRG | VSETVFLPRE | DHLFRKFHYL |
| | 151 | | | | 200 |
| Sladra-0102 | ----- | ----- | ----- | -r----- | ----- |
| Sladra-0202 | ----- | ----- | ----- | ----- | ----- |
| Sladra-0203 | ----- | ----- | ----- | ----- | ----- |
| Sladra-0101 | ----- | ----- | ----- | ----- | ----- |
| Sladra-02011 | ----- | ----- | ----- | ----- | ----- |
| Sladra-02012 | ----- | ----- | ----- | ----- | ----- |
| Consensus | PFMPSTEDVY | DCQVEHWGLD | KPLLKHWEFE | AQTPLPETTE | NTVCALGLIV |
| | 201 | | 228 | | |
| Sladra-0102 | ----- | ----- | ----- | ----- | ----- |
| Sladra-0202 | ----- | ----- | ---h--- | ----- | ----- |
| Sladra-0203 | ----- | ----- | ---h--- | ----- | ----- |
| Sladra-0101 | ----- | ----- | ----- | ----- | ----- |
| Sladra-02011 | ----- | ----- | ----- | ----- | ----- |
| Sladra-02012 | ----- | ----- | ----- | ----- | ----- |
| Consensus | ALVGIIIVGTV | LIIGVRKGN | ATERRGPL | | |

Group 01 has a leucine at residue 72 and Group 02 has a methionine.
No other polymorphisms have been found in the alpha 1 domain.

Amino Acid Sequences of SLA DRA Alleles

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FIG. 30

| | | | | | | |
|-----------|-------------|------------|--------------|--------------|-------------|----|
| | 1 | | 21 | | 41 | 50 |
| Sladrb-T | --iaq--ffm | g-s----- | -----y-qky | l----- | -----l--f-- | |
| Sladrb-N | -----f- | g-a----- | -----d-y | f--d-y-- | -----f-e- | |
| Sladrb-M | -----f- | g----- | -----q----- | -----y----- | ----- | |
| Sladrb-Z | -----y- | ----- | ----- | -----l-- | ----- | |
| Sladrb-AD | ----- | ----- | -----q-n | c-----y-- | ----- | |
| Sladrb-C | --i-----q | ----- | -----l--d-y | f----- | -----f-- | |
| Sladrb-WX | ----- | v-h-r----- | -----y-lky | l----- | -----l--e- | |
| Sladrb-Y | --i-----ffm | g-s----- | ----- | ----- | ----- | |
| Consensus | RDTPPHFLHL | LKFECHFFNG | TERVRLLEQ | YYNGEEFVRF | DSDVGEYRAV | |
| | 51 | 61 | 81 | | 100 | |
| Sladrb-T | ----- | -----m-- | k--v----- | ----- | -----r-- | |
| Sladrb-N | --f----- | -----fm-- | k-----v-- | -----e-e-- | -----r-- | |
| Sladrb-M | -----n | y----- | ----- | -----ts-- | -----r-- | |
| Sladrb-Z | -----v-d | ----- | ----- | -----ts-- | ----- | |
| Sladrb-AD | -----d | ----- | -----a----- | ----- | ----- | |
| Sladrb-C | ----- | r----- | -----s--s--i | ----- | ----- | |
| Sladrb-WX | ----- | -----i-d | -----ek----- | -----gvs-s-- | ----- | |
| Sladrb-Y | ----- | ----- | ----- | ----- | ----- | |
| Consensus | TELGRPDQAY | WNSQKDLLEQ | RRAEVDTYCR | HNRYILDFTL | VPRAEPTVT | |
| | 101 | | | | 150 | |
| Sladrb-T | ----- | ----- | ----- | ----- | ----- | |
| Sladrb-N | ----- | ----- | ----- | ----- | ----- | |
| Sladrb-M | ----- | ----- | ----- | ----- | ----- | |
| Sladrb-Z | ----- | ----- | ----- | ----- | ----- | |
| Sladrb-AD | ----- | ----- | ----- | ----- | ----- | |
| Sladrb-C | ----- | ----- | ----- | ----- | ----- | |
| Sladrb-WX | ----- | ----- | ----- | ----- | ----- | |
| Sladrb-Y | ----- | ----- | ----- | ----- | ----- | |
| Consensus | VYPAKTQPLQ | HBNLLVCSVT | GFYPGHVEVR | WFRNGQEEAA | GVVSTGLIFN | |
| | 151 | | | | 200 | |
| Sladrb-T | ----- | ----- | -----t----- | ----- | ----- | |
| Sladrb-N | ----- | ----- | ----- | ----- | ----- | |
| Sladrb-M | ----- | ----- | ----- | ----- | ----- | |
| Sladrb-Z | ----- | ----- | ----- | ----- | ----- | |
| Sladrb-AD | ----- | ----- | ----- | ----- | ----- | |
| Sladrb-C | ----- | ----- | ----- | ----- | ----- | |
| Sladrb-WX | ----- | ----- | ----- | ----- | ----- | |
| Sladrb-Y | ----- | ----- | ----- | ----- | ----- | |
| Consensus | GDWTFQTMVM | LETVPQSGEV | YSCRVEHPSL | TSPVTVEWRA | RSESAQGKMM | |
| | 201 | | | 237 | | |
| Sladrb-T | --v----- | ----- | ----- | ----- | ----- | |
| Sladrb-N | ----- | ----- | ----- | ----- | ----- | |
| Sladrb-M | ----- | ----- | ----- | ----- | ----- | |
| Sladrb-Z | --v----- | ----- | ----- | ----- | ----- | |
| Sladrb-AD | ----- | ----- | ----- | ----- | ----- | |
| Sladrb-C | --v----- | ----- | ----- | ----- | ----- | |
| Sladrb-WX | ----- | ----- | ----- | ----- | ----- | |
| Sladrb-Y | --v----- | ----- | ----- | ----- | ----- | |
| Consensus | SGIGGFVLGL | LFVAVGLFIY | FKNQKGRPAL | QPTGLLS | | |

Amino Acid Sequence of SLA-DRB Alleles

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FIG. 31

| | | | | | | |
|--------------|-------------|------------|------------|------------|------------|-------|
| | | | | | | 50 |
| Sladqa-02021 | ----- | ----- | ----- | ----- | g | ----- |
| Sladqa-02022 | ----- | ----- | ----- | ----- | g | ----- |
| Sladqa-02023 | ----- | ----- | ----- | ----- | g | ----- |
| Sladqa-0201 | ----- | ----- | ----- | ----- | ----- | ----- |
| Sladqa-0101 | ----- | ----- | ----- | ----- | ----- | ----- |
| Sladqa-0103 | ----- | ----- | ----- | ----- | ----- | ----- |
| Sladqa-0102 | ----- | ----- | ----- | ----- | ----- | ----- |
| Consensus | EDIAADHVAS | YGLNVYQSYG | PSGYTTFEFD | GDEEFYVDLE | KKETVWQLPL | |
| | | | | | | 100 |
| Sladqa-02021 | -----r----- | ----- | ----- | ----- | ----- | ----- |
| Sladqa-02022 | -----r----- | ----- | ----- | ----- | ----- | ----- |
| Sladqa-02023 | -----r----- | ----- | ----- | ----- | ----- | ----- |
| Sladqa-0201 | ----- | ----- | ----- | ----- | ----- | ----- |
| Sladqa-0101 | -----e----- | ----- | ----- | ----- | ----- | ----- |
| Sladqa-0103 | -----e----- | ----- | ----- | ----- | ----- | ----- |
| Sladqa-0102 | -----e----- | ----- | ----- | ----- | ----- | ----- |
| Consensus | FSKFTSFDPO | GALRNIATAK | HNLNLIKRS | NNTAAVNQVP | EVTVPKSPV | |
| | | | | | | 150 |
| Sladqa-02021 | ----- | ----- | ----- | ----- | ----- | ----- |
| Sladqa-02022 | ----- | ----- | ----- | ----- | ----- | ----- |
| Sladqa-02023 | ----- | ----- | ----- | ----- | ----- | ----- |
| Sladqa-0201 | ----- | ----- | ----- | ----- | ----- | ----- |
| Sladqa-0101 | i----- | ----- | ----- | ----- | ----- | ----- |
| Sladqa-0103 | i----- | ----- | ----- | ----- | ----- | ----- |
| Sladqa-0102 | i----- | ----- | ----- | ----- | ----- | ----- |
| Consensus | MLGQPNTLIC | HVDNIFPPVI | NITWLKNGHS | VTEGFSETSF | LSKNDHSFLK | |
| | | | | | | 200 |
| Sladqa-02021 | ----- | ----- | ----- | ----- | ----- | ----- |
| Sladqa-02022 | ----- | ----- | ----- | ----- | ----- | ----- |
| Sladqa-02023 | ----- | ----- | ----- | ----- | ----- | ----- |
| Sladqa-0201 | ----- | ----- | ----- | ----- | ----- | ----- |
| Sladqa-0101 | ----- | ----- | ----- | ----- | ----- | ----- |
| Sladqa-0103 | ----- | ----- | ----- | ----- | ----- | ----- |
| Sladqa-0102 | ----- | ----- | ----- | ----- | ----- | ----- |
| Consensus | ISYLTFLPSD | DDFYDCKVEH | WGLDKPILKH | WEPEIPAPMS | ELTETVVCAL | |
| | | | | | | 232 |
| Sladqa-02021 | ----- | ----- | ----- | ----- | ----- | ----- |
| Sladqa-02022 | ----- | ----- | ----- | ----- | ----- | ----- |
| Sladqa-02023 | ----- | ----- | ----- | ----- | ----- | ----- |
| Sladqa-0201 | ----- | ----- | ----- | ----- | ----- | ----- |
| Sladqa-0101 | ----- | ----- | ----- | ----- | ----- | ----- |
| Sladqa-0103 | ----- | ----- | ----- | ----- | ----- | ----- |
| Sladqa-0102 | ----- | ----- | ----- | ----- | ----- | ----- |
| Consensus | GLIVGLVGIV | VGTVFIIQGL | RSGGPSRHOG | SL | | |

Group 01 is 231 amino acids (deletion at 132) and Group 02 is 232 amino acids

Amino Acid Sequences of SLA-DQA Alleles

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FIG. 32

| | | | | | | |
|-----------|------------|------------|------------|-------------|------------|-----|
| | 1 | | | | | 50 |
| Sladqb-D | -----v | ---g---y | -----ws-d | -----fl- | -----m-y- | |
| Sladqb-D2 | -----f | ---g---y | -----ws-d | -----fl- | -----m-y- | |
| Sladqb-XA | ----- | ----- | -----g | wv | ----- | |
| Sladqb-Z | ----- | -----y | -----l | wv-r | ----- | |
| Sladqb-W | ----- | ----- | -----i-t | -----ya- | -----y- | |
| Sladqb-T | ----- | ----- | -----llt | ----- | -----n-y- | |
| Sladqb-Y | ----- | ---g--- | -----h-t | ----- | ----- | |
| Sladqb-C | -----f | ---g---y | -----g | -----l- | ----- | |
| Consensus | GRDSPQDFVY | QFKFECYFFN | GTQVRV-VAR | YIYNQEEHVR | FDSDVGEFRA | |
| | 51 | | | | | 100 |
| Sladqb-D | ----- | -l---ea- | ----- | ----- | ----- | |
| Sladqb-D2 | ----- | -l---ea- | ----- | ----- | ----- | |
| Sladqb-XA | -----t- | ----- | -----v- | ----- | ----- | |
| Sladqb-Z | ----- | -----e | ----- | ----- | ----- | |
| Sladqb-W | -----a- | ---s-i- | -t----- | ----- | ----- | |
| Sladqb-T | ----- | ----- | -t----- | ----- | ----- | |
| Sladqb-Y | ----- | -----f- | -t----- | ----- | ----- | |
| Sladqb-C | -----e- | s-s- | m-v-r- | ----- | ----- | |
| Consensus | VTPLGRPDAD | YWNGQKDVLE | QKRAELDTVC | KHNYQIEEGT | TLQRRVQPTV | |
| | 101 | | | | | 150 |
| Sladqb-D | ----- | ----- | ----- | ----- | ----- | |
| Sladqb-D2 | ----- | ----- | ----- | ----- | ----- | |
| Sladqb-XA | ----- | ----- | ----- | ----- | ----- | |
| Sladqb-Z | ----- | ----- | ----- | ----- | ----- | |
| Sladqb-W | ----- | ----- | ----- | ----- | ----- | |
| Sladqb-T | ----- | ----- | ----- | ----- | ----- | |
| Sladqb-Y | ----- | ----- | ----- | ----- | ----- | |
| Sladqb-C | ----- | ----- | ----- | ----- | ----- | |
| Consensus | TISFSKAEAL | NHHNLLVCAV | TDFYPSQVKV | QWFRNGQEET | AGVVSTPLIR | |
| | 151 | | | | | 200 |
| Sladqb-D | ----- | ----- | ----- | ----- | ----- | |
| Sladqb-D2 | ----- | ----- | ----- | -----n----- | ----- | |
| Sladqb-XA | ----- | ----- | ----- | ----- | ----- | |
| Sladqb-Z | ----- | ----- | ----- | ----- | ----- | |
| Sladqb-W | ----- | ----- | ----- | ----- | ----- | |
| Sladqb-T | ----- | ----- | ----- | ----- | ----- | |
| Sladqb-Y | ----- | ----- | ----- | -----n----- | ----- | |
| Sladqb-C | ----- | ----- | ----- | ----- | ----- | |
| Consensus | NGDWTYQVLV | MLEMNLQRGD | VYTCRVEHSS | LQSPILVEWR | AQSESAQSKM | |
| | 201 | | 230 | | | |
| Sladqb-D | ----- | ----- | ----- | ----- | ----- | |
| Sladqb-D2 | ----- | ----- | ----- | ----- | ----- | |
| Sladqb-XA | ----- | ----- | ----- | ----- | ----- | |
| Sladqb-Z | ----- | ----- | ----- | ----- | ----- | |
| Sladqb-W | ----- | ----- | ----- | ----- | ----- | |
| Sladqb-T | ----- | ----- | ----- | ----- | ----- | |
| Sladqb-Y | ----- | ----- | ----- | ----- | ----- | |
| Sladqb-C | ----- | ----- | ----- | ----- | ----- | |
| Consensus | LSGVGGFVLG | LIFLGLGLFI | RHRSQKGLVR | | | |

Amino Acid Sequences of SLA-DQB Alleles